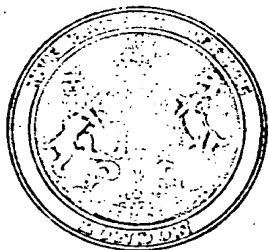


MAGNETIC PYRITES (comminuted/shaved/ground) mixed with BINDERS (Plastics/Rubber/Ceramic substances in EQUAL VOLUMES. (Silicone Plastic Binder)



PATENT SPECIFICATION

BRITISH

611,742

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COMPLETE SPECIFICATION

Improved Electronic Shields

I, HERBERT OESTERLE ROSS, a citizen of the United States of America, of 309, North 10th Street, City of St. Louis, State of Missouri, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to electronic shields and has for its objects to provide electronic shields made from a material which has a relatively high resistance to surface abrasion and which is comparatively strong under both compression and tensile loads.

An electronic shield surrounds electrical apparatus and absorbs stray lines of magnetic and electric force which might otherwise have some electrical effect upon an adjacent piece of apparatus. An electronic shield does not in any sense transmit or become a part of the electrical circuit.

According to the present invention an electronic shield is made of a composition comprising a coherent mass of thoroughly intermixed comminuted magnetic pyrites, and a binder of the class consisting of plastics, rubber and ceramic substances.

The pyrites may be in the form of filings, finely divided shavings or particles or may be especially reduced to a fine condition for the express purpose of incorporation into the product of the present invention.

The material may be formed into a moulded shape or may be pressed into the required shape either by cold moulding or by heat and pressure.

In order that the nature of the invention and the manner in which it is to be performed may be clearly understood, the invention will now be described by way of example, and not by way of limitation.

Example I.

A quantity of magnetic pyrites is reduced by grinding, or other comminuting methods, to pass a one-hundred-mesh screen, i.e., a screen having one hundred openings per lineal inch, each opening being .0058 in. Equal portions, by volume, of the comminuted pyrites and phenolic resin plastic are thoroughly mixed. The mixture is then poured into a suitable

pressure mould of the desired shape to form the electronic shield and subjected to heat and pressure to polymerize the resin. If desired, a thermoplastic resin may be used in place of the phenolic resin plastic.

The resulting electronic shield is obviously much less expensive than a product made entirely of plastic, is structurally strong, attractive in appearance, has greater resistance to surface abrasion than the plastic alone, and, in addition, possesses excellent electronic shielding characteristics.

Example II.

Magnetic pyrites may be comminuted to pass a one hundred mesh screen. Equal portions, by volume, of the comminuted pyrites and silicone plastic may be thoroughly mixed. This mixture may be then vulcanized or polymerized by heat and pressure to form a shield having a rubbery resiliency and good abrasion resistant properties with comparatively strong compressive and tensile strength.

Example III.

Magnetic pyrites which is comminuted to pass a one hundred mesh screen, to which powdered ceramic frit is added in equal portions, by weight and thoroughly mixed. The mixture may be then poured into a suitable mould to form the shield and heated to the fusion point of the frit. It is, of course, necessary to employ a frit having a fusion point below 700° F.

With each of the above examples, experiments have shown that the electronic shields possess excellent physical characteristics. The products formed with plastic binders can be cut, sawed, drilled, screw-threaded, turned and polished, and can be handled generally in much the same way as objects made wholly of plastics.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electronic shield made of a composition comprising a coherent mass of thoroughly intermixed comminuted magnetic pyrites, and a binder of the class consisting of plastics, rubber and ceramic substances.

Thermoplastic Resin
Phenolic Resin

Ceramic Frit

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[Price 2/-]

2. An electronic shield according to Claim 1 wherein the binder is a phenolic resin.
3. An electronic shield according to Claim 1 wherein the binder is a polymerizable plastic.
- 5 4. An electronic shield according to Claim 1 wherein the binder is a thermoplastic resin.
5. An electronic shield according to Claim 1 wherein the binder is a silicone plastic.
6. An electronic shield according to Claim 1
- 10 wherein the binder is a ceramic material.
7. An electronic shield made of a composition

substantially as described in any of the foregoing Examples.

Dated this 7th day of January, 1946.

HERBERT OESTERLE ROSS.

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